

18/509069

Docket No. JAB-1703

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#5

Applicants : Simone Josephine Anne Lesage et al.

Serial No. : Art Unit:

Filed : Examiner:

For : RADIOLABELLED QUINOLINE AND QUINOLINONE
DERIVATIVES AND THEIR USE AS METABOTROPIC
GLUTAMATE RECEPTOR LIGANDS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 C.F.R. §1.56(b).

Applicant(s) reserve(s) the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist.

☒ In accordance with §1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified national application

(other than a continued prosecution applied for under §1.53(d)), within three months of the date of entry into the national stage of the above identified application as set forth in §1.491, or before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first Office Action after the filing of a request for continued examination under §1.114, no additional fee is required.

☐ In accordance with §1.129(a), this Information Disclosure Statement is being filed in connection with ☐ the first or ☐ second After Final Submission, therefore:

- ☐ Statement in Accordance with §1.97(e) (attached); or
- ☐ Please charge Deposit Account No. 10-0750/ / the fee of \$180.00 as set forth in §1.17(p).

☐ In accordance with §1.97(c), this Information Disclosure Statement is being filed after the period set forth in §1.97(b) above but before the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311, or an action that otherwise closes prosecution and that it is accompanied by one of:

- ☐ Statement in Accordance with §1.97(e) (attached); or
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☐ In accordance with §1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311 but before the payment of the Issue Fee. Applicant(s) hereby petition(s) for consideration of this

0/509069

Information Disclosure Statement. Included are: Statement in
Accordance with §1.97(e) as set forth below and the fee of **DT09 Rec'd PCT/PTO 24 SEP 2004**
\$180.00 as set forth in §1.17(p).

☐ Copies of each of the references listed on the
attached Form PTO-1449 are enclosed herewith.

☐ Copies of references listed on the attached Form PTO-
1449 are enclosed herewith EXCEPT THAT:

☐ In view of the voluminous nature of references
[list as appropriate], and the likelihood that
these references are available to the Examiner,
copies are not enclosed herewith.

☐ If any of the foregoing publications are not
available to the Examiner, Applicant will
endeavor to supply copies at the Examiner's
request.

☒ Copies of only foreign patent documents and non-
patent literature are enclosed in accordance with 37 CFR 1.98
(a)(2). (The U.S. patents and each U.S. patent application
publication listed on the attached Form PTO-1449 are not
enclosed because this U.S. patent application was filed after
June 30, 2003 or this international application has entered the
national stage under 35 USC §371 after June 30, 2003 (see USPTO
waiver of requirement under 37 CFR 1.98 (a)(2)(i)).

☐ There are no listed references which are not in the
English language.

☒ The relevance of those listed references which are
not in the English language can be found in an English-language
abstract attached thereto.

10/509069

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☒ Attached are copies of search report(s) from corresponding patent application(s), which are listed on the attached Submission Under MPEP 609 D.

☐ Attached are the following non-published pending patent applications which may be deemed relevant, which are listed on the attached Submission Under MPEP 609 D.

Please charge any deficiency or credit any overpayment to Deposit Account No. 10-0750/JAB-1703/HBW. This form is submitted in triplicate.

Respectfully submitted,

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DATED: September 24, 2004

SUBMISSION UNDER MPEP 609 D	Application Number	
	Filing Date	Lesage et al
	First Named Inventor	10/509069
	Group Art Unit	
	Examiner Name	
Page 1 of 1	Attorney Docket Number	JAB-1703

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	Name of Patentee or Applicant of Cited Document	U.S. Patent Document		Pages, Columns, Lines, where relevant passages or relevant figures appear
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FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	Name of Patentee or Applicant of Cited Document	Foreign Patent Document			Pages, Columns, Lines, where relevant passages or relevant figures appear	T ⁶
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner 's Initials*	Cite No. ¹	Include name of the author (in CAPITOL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		PCT Search Report for PCT/EP03/03240 dated September 23, 2003 (Atty. Docket JAB-1703 PCT)	

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DT09 d PCT/PTO 24 SEP 2004

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 3

Application Number **10/509069**
Filing Date
First Named Inventor Lesage et al.
Group Art Unit
Examiner Name
Attorney Docket Number JAB-1703

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document mm-dd-yyyy	Pages, Columns, Lines, where relevant passages or relevant figures appear
		Number	Kind Code ² (if known)			
		4,931,270		Horn et al.	6-05-1990	

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		Office ³	Number ⁴	Kind Code ⁵				
		WO	0228837	A	Janssen Pharmaceutica N.V.	4-11-2002		
		JP	2000169450	A	Kyorin Pharmaceut Co (w/English- language abstract)	6-20-2000		
		WO	9926927	A	NPS Pharmaceuticals, Inc.	6-03-1999		
		WO	9903822	A	Georgetown University	1-28-1999		
		WO	9427605	A	State of Oregon	12-08-1994		
		WO	96 05818	A	NPS Pharmaceuticals, Inc.	2-29-1996		

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. ⁶ 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 2 of 3

Application Number	10/509069
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		Stone T.W., "Development and therapeutic potential of kynurenic acid and kynurenine derivatives for neuroprotection," Trends in Pharmacological Sciences, Elsevier Trends Journal, vol. 21, no. 4, April 2000, pp. 149-154	
		Sing-Yuen S et al., "3-Hydroxy-quinolin-2-ones: inhibitors of HI-glycine binding to the site associated with the NMDA receptor," Bioorganic & Medicinal Chemistry Letters, vol. 6, no. 5, 5 March 1996, pp. 499-504	
		Dabhi T.P. et al., "Potential antimicrobial Agents: Synthesis of N,N-Diaryl/N,N-Dialkyl/N-Aryl-N-Alkyl-(2-Aryl/Styryl-6-Acetylquinolin-4-YL)-Formadies," Indian Journal of Heterocyclic Chemistry, vol. 2, no. 2 October 1992 (pp.137-138)	
		Bhatt D.J. et al., "Studies on Chalcones: Preparation and Antimicrobial Activity of 2-aryl-4-carboxy-6-acetylquinoline and 2-aryl-4-carboxy-6-benzalacetquinolines," Journal of the Indian Chemical Society, The Indian Chemical Society, vol. 61, no. 9, September 1984, pp. 816-818	
		Mutel Vincent et al., "Characterization of (3H) quisqualate binding to recombinant rat metabotropic glutamate 1a and 5a receptors and to rat and human brain sections," Journal of Neurochemistry, vol. 75, no. 6, Dec. 2000, pp. 2590-2601	
		Peng C. T. et al., "An Evaluation of Different Methods for Tritium Labelling," Fusion Technology, American Nuclear Society, vol. 21, no. 2, pt. 2, pp. 307-311, 1 March 1992	
		Brundish et al., "Tritium labeling by selective debromination," Journal of Labelled Compounds and Radio pharmaceuticals, Sussex, GB, vol. 25, no. 12, 1988, pp. 1361-1369	
		Thomsen et al., "A Pharmacological characterization of the MgluR1 α subtype of the metabotropic glutamate receptor expressed in a cloned baby hamster kidney cell line," <u>Brain Res.</u> 619:22-28, 1993	
		Kingston, A.E., et al., "Sulphur-containing amino acids are agonists for group 1 metabotropic receptors expressed in clonal RGT cell lines," <u>Neuropharmacology</u> 37:277-287, 1998	
		Mutel et al., "Characterization of [3H] Quisqualate Binding to Recombinant Rat Metabotropic Glutamate 1a and 5a Receptors and to Rat and Human Brain Sections," <u>J. Neurochem.</u> 75:2590-2601, 2000	
		Scott, W.J. et al., "Palladium-Catalyzed Coupling of Vinyl Triflates with Organostannanes. A short Synthesis of Pleraplysillin-1," <u>J. Am. Chem. Soc.</u> , 1984, 106, 4630	
		Lavreysen et al., "Supersensitivity of Human Metabotropic Glutamate 1a Receptor Signaling in L929sA Cells," <u>Mol. Pharmacol.</u> 61:1244-1254, 2002	
		Cheng et al., "Relationship Between the Inhibition Constant (K _i) and the Concentration of Inhibitor Which Causes 50 Per Cent Inhibition (I ₅₀) of an Enzymatic Reaction," <u>Biochem. Pharmacol.</u> 22, 3099-3108, 1973	

Examiner Signature		Date Considered	
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	Filing Date	10/509069
	First Named Inventor	Lesage et al.
	Group Art Unit	
	Examiner Name	
	Attorney Docket Number	JAB-1703

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		Litschig et al., "CPCOEt, a Noncompetitive Metabotropic Glutamate Receptor 1 Antagonist, Inhibits Receptor Signaling Without Affecting Glutamate Binding," <u>Molecular Pharmacol.</u> 55:453-461, 1999	
		Zhu et al., "The Competitive and Noncompetitive Antagonism of Receptor-Mediated Drug Actions in the Presence of Spare Receptors," <u>J.Pharm. Tox. Meth.</u> 29:85-91, 1993)	
		Carroll et al., "BAY36-7620: A Potent Non-Competitive mGlu1 Receptor Antagonist with Inverse Agonist Activity," <u>Mol. Pharmacol.</u> 59:965-973, 2001	
		Hermans et al., "Reversible and non-competitive antagonist profile of CPCOEt at the human type 1a metabotropic glutamate receptor," <u>Neuropharmacology</u> 37:1645-1647, 1998	
		van de Waterbeemd et al., "Molecular electrostatic Potential of Orthopramides: Implications for Their Interaction with the D-2 Dopamine Receptor," <u>J.Med. Chem.</u> 29:600-606, 1986	
		Schoepp et al., "1S,3R-ACPD-sensitive (metabotropic) [³ H]glutamate receptor binding in membranes," <u>Neurosci. Lett</u> 145:100-104, 1992	
		Wright et al., "Distribution and Ontogeny of 1S,3R-1-Aminocyclopentane-1,3-Dicarboxylic Acid-Sensitive and Quisqualate-Insensitive [3H]Glutamate Binding Sites in the Rat Brain," <u>J. Neurochem.</u> 63:938-945, 1994	
		Lujan et al., "Perisynaptic Location of Metabotropic Glutamate Receptors mGluR1 and mGluR5 on Dendrites and Dendritic Spines in the Rat Hippocampus," <u>Eur.J.Neurosci.</u> 8:1488-1500, 1996	
		Shigemoto et al., "Differential Presynaptic Localization of Metabotropic Glutamate Receptor Subtypes in the Rat Hippocampus," <u>J. Neurosci.</u> 17:7503-7522, 1997	
		Martin et al., "Cellular Localization of a Metabotropic Glutamate Receptor in Rat Brain," <u>Neuron.</u> 9:259-270, 1992	
		Ferraguti et al., "Immunohistochemical Localization of the mGluR1 β Metabotropic Glutamate Receptor in the Adult Rodent Forebrain: Evidence for a Differential Distribution of mGluR1 Splice Variants," <u>J. Comp. Neur.</u> 400:391-407, 1998	

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